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(54) INFORMATION SYSTEM AND METHOD FOR DISSEMINATING TECHNOLOGY INFORMATION

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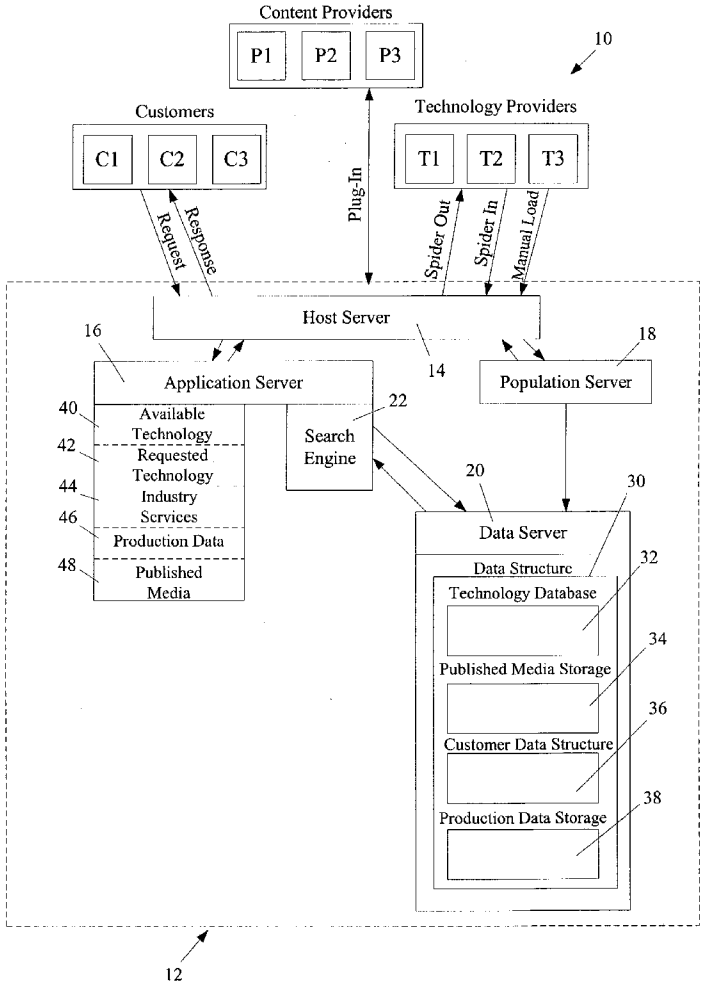
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(57) **ABSTRACT**

An informational system for disseminating technology information between requestors and purveyors as well as a method for using the system for this purpose. The informational system generally includes requestor and purveyor servers as well as a host system having a data structure, a search engine communicating with the data structure, and an application server communicating with the data structure and search engine. The data structure includes a plurality of data arrays for storing, among other information, a plurality of data entries each with technology and purveyor data as well as requestor data including requestor registered external informational sources. The application server is configured to receive a search request having a technology parametric from a requestor, to cause the search engine to conduct a search in one of the data arrays, and communicate a search report to the requestor. The application server optionally includes a number of search modules for identifying suitable available technology as well as accessing external informational sources for further exploring the suitability of technology for the requestor's application or industry.



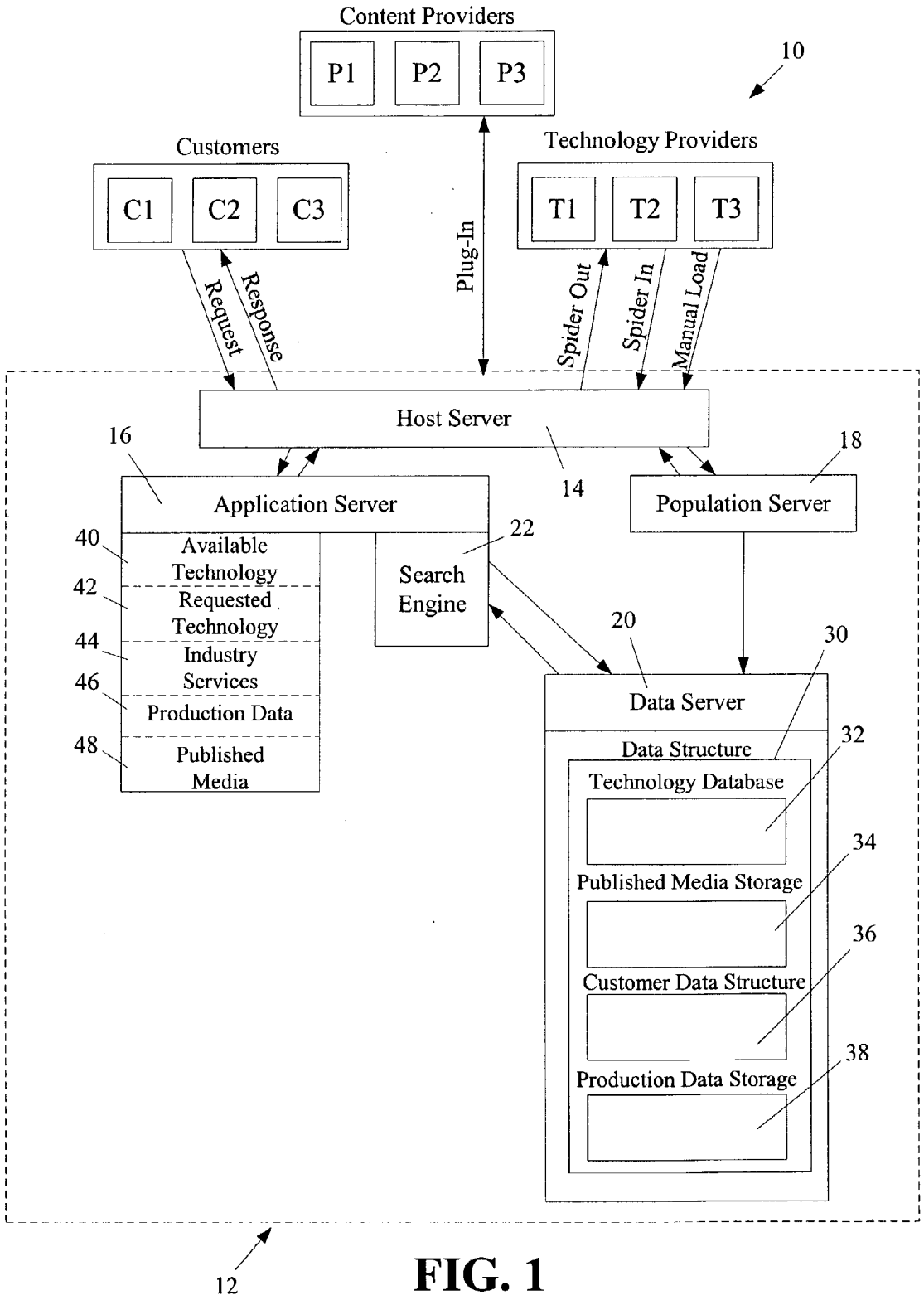

Content Providers
P1
P2
P3
10
Customers
C1
C2
C3
Technology Providers
T1
T2
T3
Plug-In
Request
Response
Spider Out
Spider In
Manual Load
Host Server
16
14
18
Application Server
Population Server
40
Available Technology
42
Requested Technology
44
Industry Services
46
Production Data
48
Published Media
22
Search Engine
20
30
Data Server
Data Structure
32
Technology Database
34
Published Media Storage
36
Customer Data Structure
38
Production Data Storage
12

FIG. 1

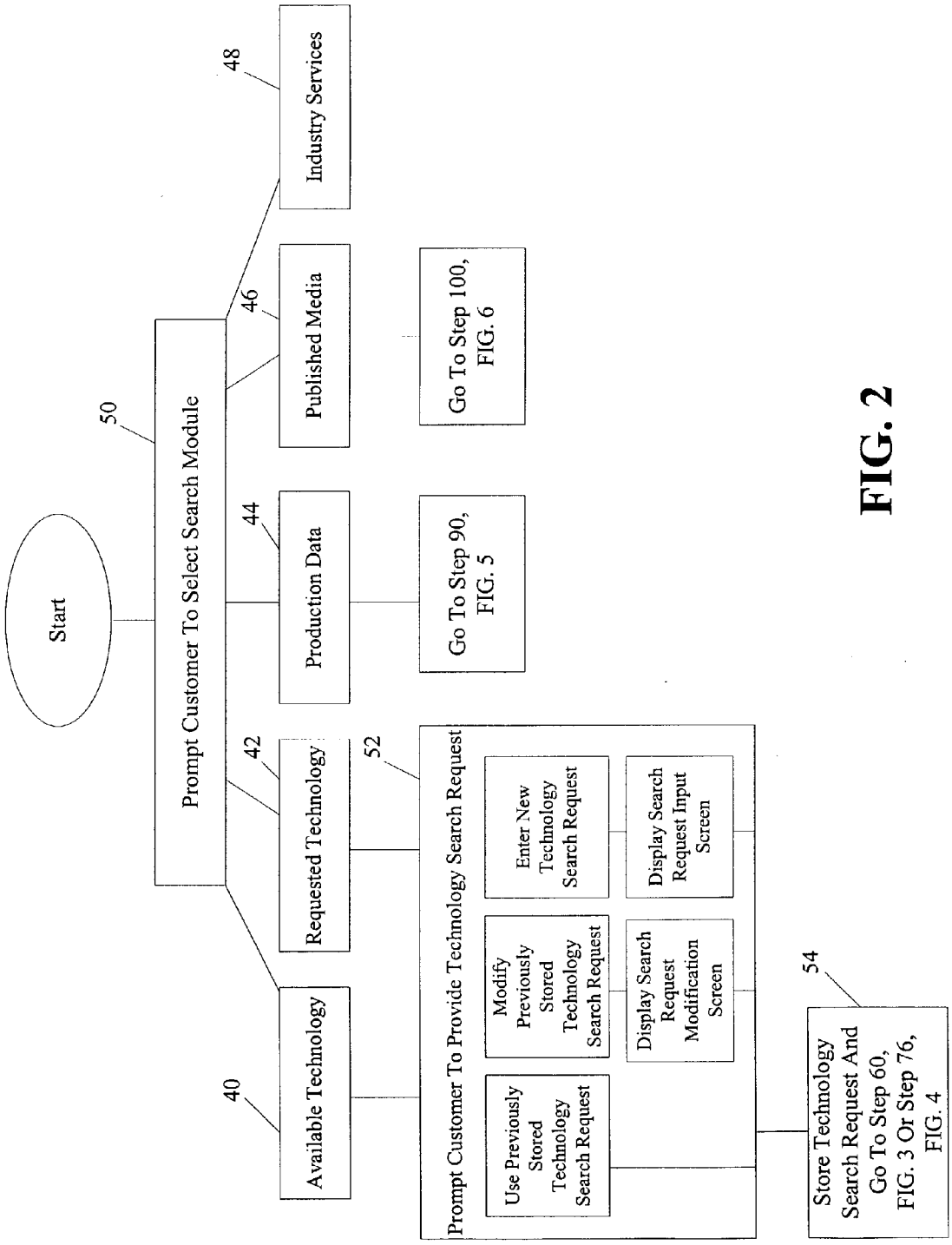

Start
Prompt Customer To Select Search Module
50
Available Technology
40
Requested Technology
42
Production Data
44
Published Media
46
Industry Services
48
Prompt Customer To Provide Technology Search Request
52
Use Previously Stored Technology Search Request
Modify Previously Stored Technology Search Request
Enter New Technology Search Request
Display Search Request Modification Screen
Display Search Request Input Screen
Go To Step 90, FIG. 5
Go To Step 100, FIG. 6
Store Technology Search Request And Go To Step 60, FIG. 3 Or Step 76, FIG. 4
54

FIG. 2

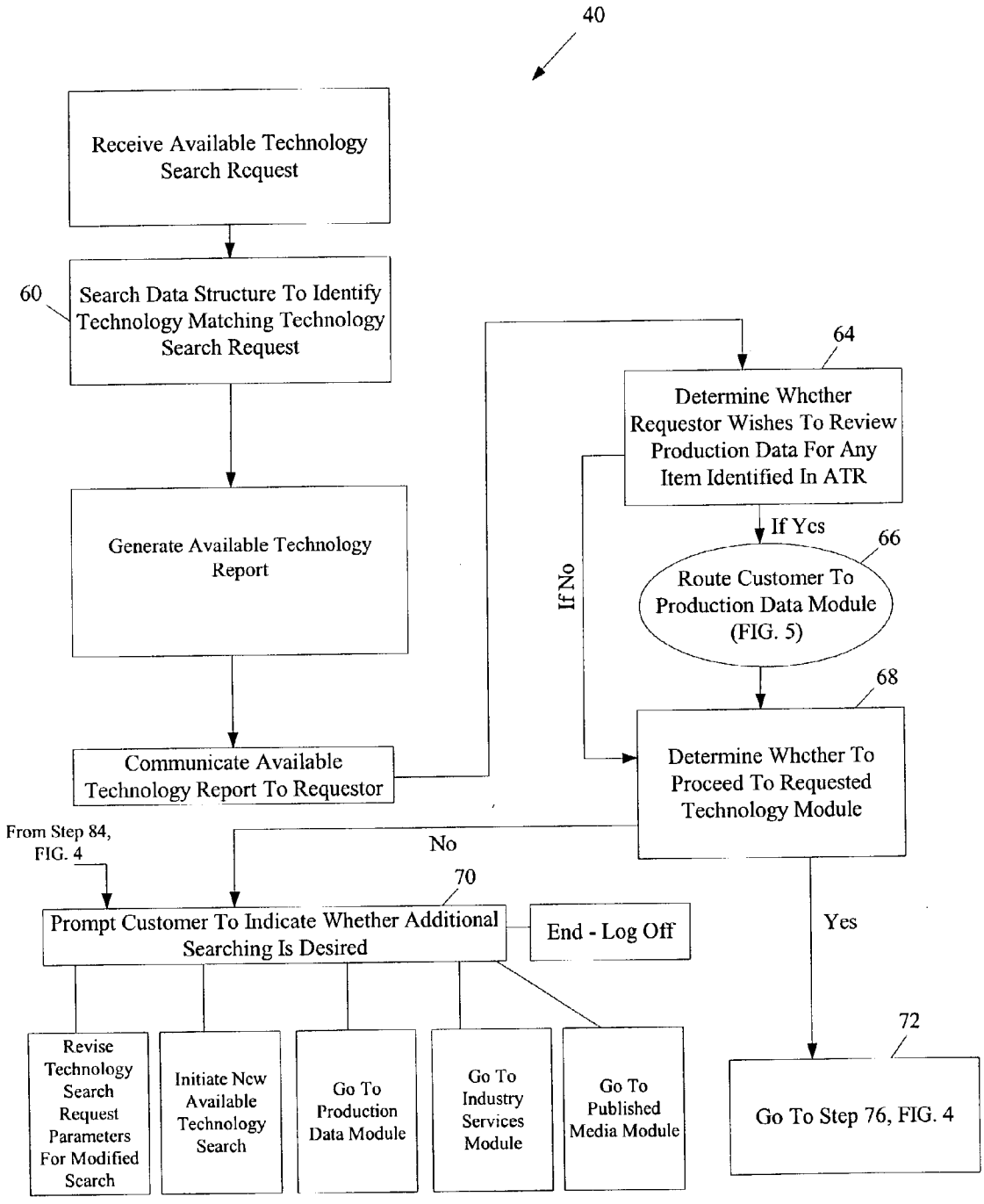

40
Receive Available Technology Search Request
60
Search Data Structure To Identify Technology Matching Technology Search Request
Generate Available Technology Report
Communicate Available Technology Report To Requestor
64
Determine Whether Requestor Wishes To Review Production Data For Any Item Identified In ATR
If Yes
If No
66
Route Customer To Production Data Module (FIG. 5)
68
Determine Whether To Proceed To Requested Technology Module
From Step 84, FIG. 4
No
70
Prompt Customer To Indicate Whether Additional Searching Is Desired
End - Log Off
Yes
72
Go To Step 76, FIG. 4
Revise Technology Search Request Parameters For Modified Search
Initiate New Available Technology Search
Go To Production Data Module
Go To Industry Services Module
Go To Published Media Module

FIG. 3

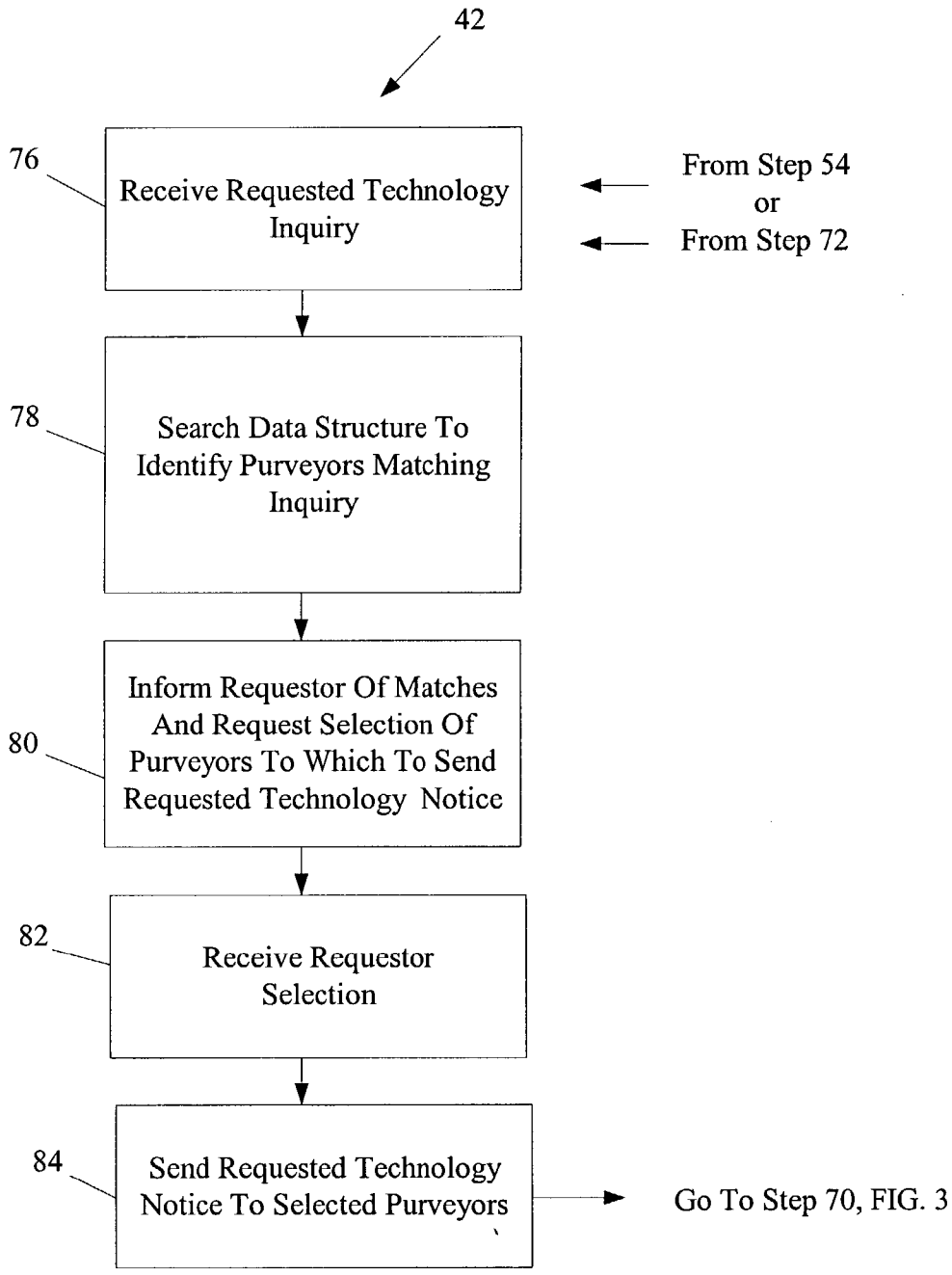

42
76
Receive Requested Technology Inquiry
From Step 54
or
From Step 72
78
Search Data Structure To Identify Purveyors Matching Inquiry
80
Inform Requestor Of Matches And Request Selection Of Purveyors To Which To Send Requested Technology Notice
82
Receive Requestor Selection
84
Send Requested Technology Notice To Selected Purveyors
Go To Step 70, FIG. 3

FIG. 4

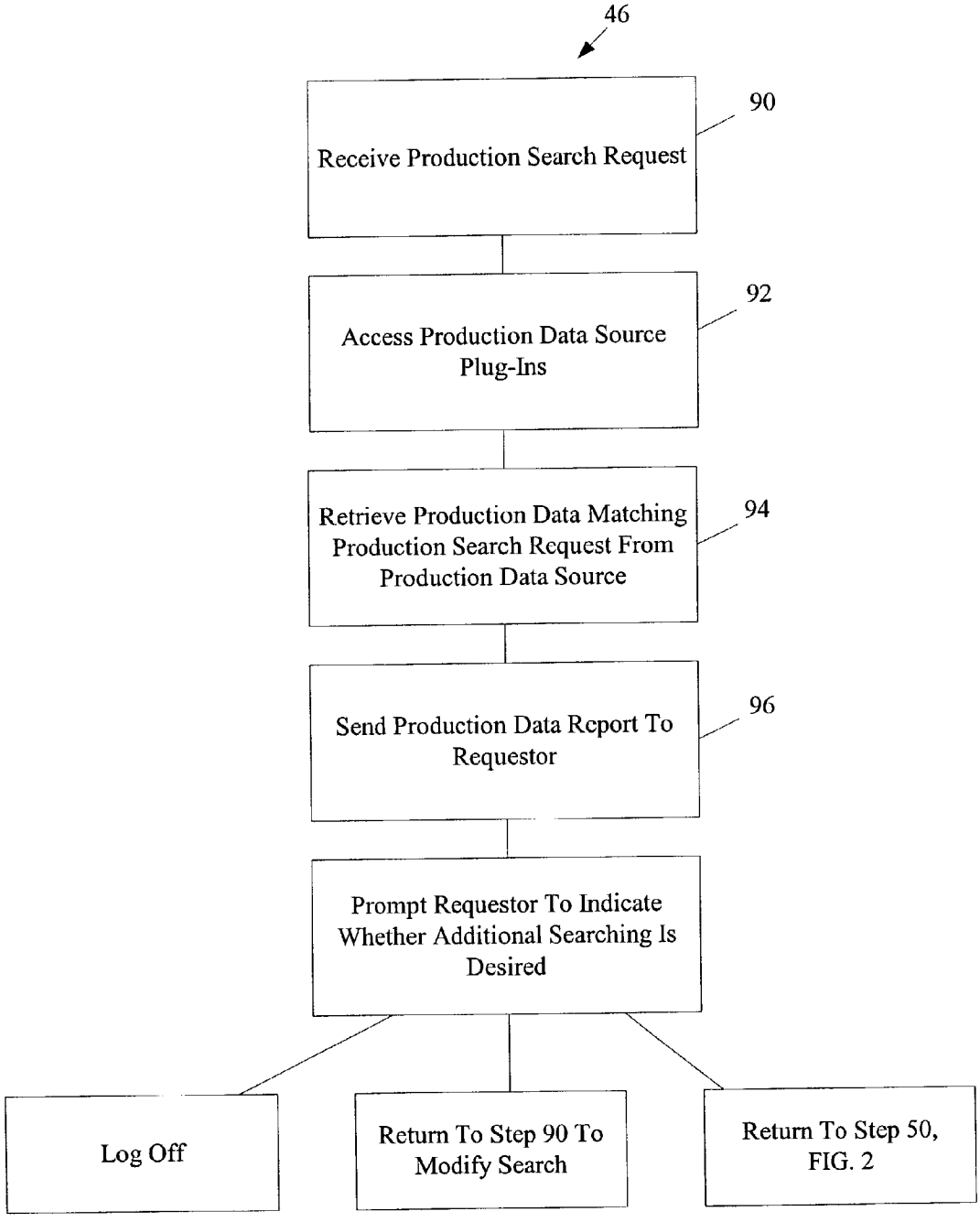

46
Receive Production Search Request
90
Access Production Data Source Plug-Ins
92
Retrieve Production Data Matching Production Search Request From Production Data Source
94
Send Production Data Report To Requestor
96
Prompt Requestor To Indicate Whether Additional Searching Is Desired
Log Off
Return To Step 90 To Modify Search
Return To Step 50, FIG. 2

FIG. 5

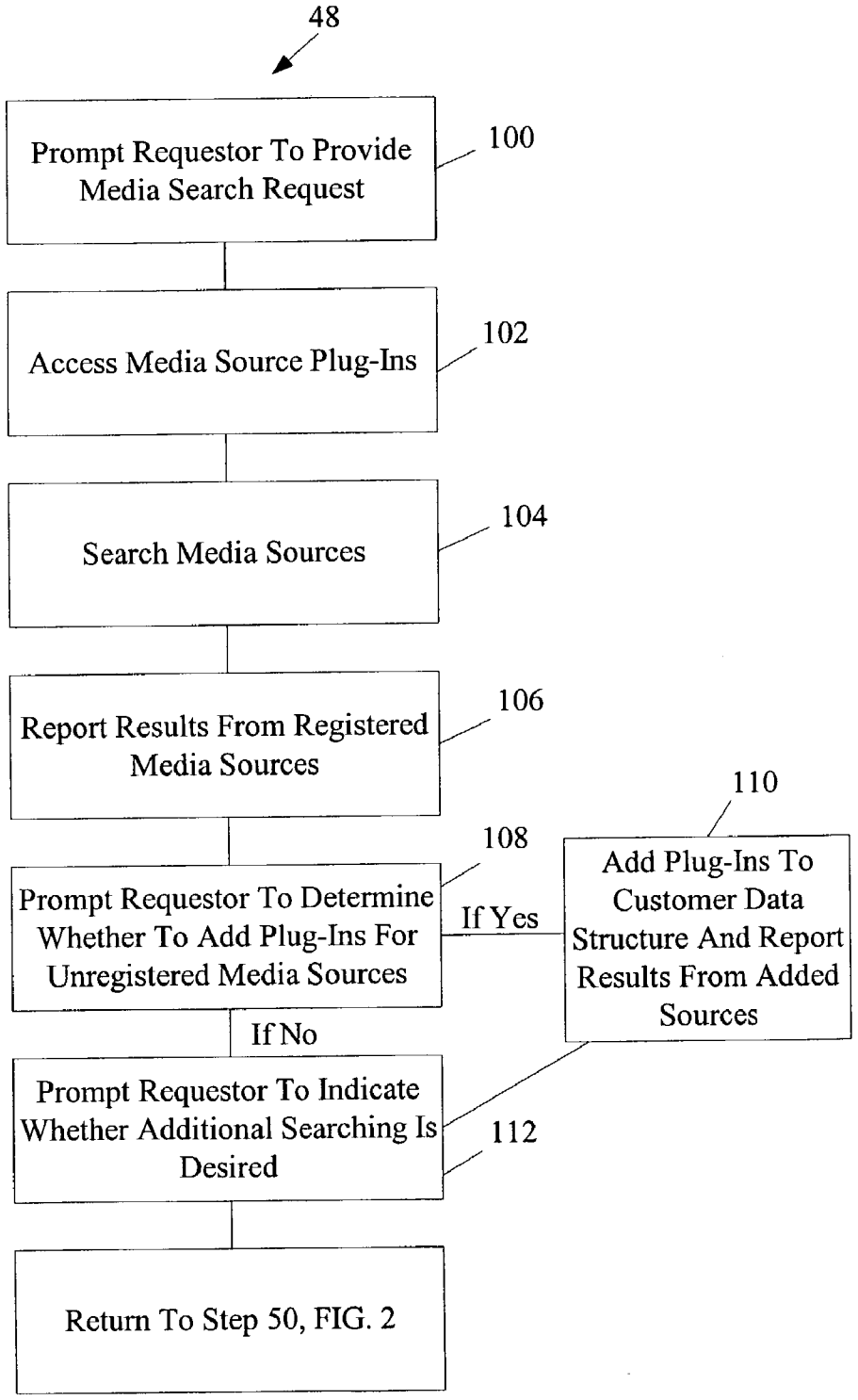

48
Prompt Requestor To Provide Media Search Request
100
Access Media Source Plug-Ins
102
Search Media Sources
104
Report Results From Registered Media Sources
106
Prompt Requestor To Determine Whether To Add Plug-Ins For Unregistered Media Sources
108
If Yes
Add Plug-Ins To Customer Data Structure And Report Results From Added Sources
110
If No
Prompt Requestor To Indicate Whether Additional Searching Is Desired
112
Return To Step 50, FIG. 2

FIG. 6

INFORMATION SYSTEM AND METHOD FOR DISSEMINATING TECHNOLOGY INFORMATION

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Application No. 60/359,344, filed Feb. 25, 2002, the entire disclosure of the application is considered part of the disclosure of this application and is hereby incorporated by reference.

BACKGROUND OF THE INVENTION

[0002] The present invention relates to a system and method for disseminating information between requestors and purveyors of technology related products and/or services and, more particularly, a system and method for assembling, storing, and disseminating technology information pertaining to one or more industries.

[0003] Presently, in many technology industries, manufacturers and suppliers rely on numerous, highly specialized consulting services and trade journals, interpersonal meetings/email/phone conversations, multiple link web searches and, quite often, coincidental relationships to gather and exchange industry information regarding production data, marketing data, available technology, and customer needs. These methods of gathering and exchanging information are time consuming, expensive, and often provide incomplete or deficient results. Accordingly, there is a need for a system and method for assembling, storing and disseminating technology information (pertaining to products and/or services) which overcomes the shortcomings of the prior art.

SUMMARY OF THE INVENTION

[0004] The present invention addresses the above and other needs in the art through an information system and method that assembles and stores available information in an integrated data structure. The information system and method permits the efficient dissemination of technology information between requesters, those seeking information, and purveyors, those seeking to disseminate technology information relating to purveyor offered technology products or services. In certain embodiments, the system and method permits users to focus the information toward specific industries as well as customization for individual requestors. These and the other features of the invention provide a system and method that more effectively disseminates technology information to users.

[0005] In view of the above, the present invention is directed to an informational system for disseminating technology information between requestors and purveyors as well as a method for using the system for this purpose. The informational system generally includes requestor and purveyor servers as well as a host system having a data structure, a search engine communicating with the data structure, and an application server communicating with the data structure and search engine. The data structure includes a plurality of data arrays for storing, among other information, a plurality of data entries each with technology and purveyor data as well as requester data including requestor registered external informational sources. The application server is configured to receive a search request having a technology parametric from a requester, to cause the search engine to conduct a search in one of the data arrays, and communicate a search report to the requester. The application server optionally includes a number of search modules for identifying suitable available technology as well as accessing external informational sources for further exploring the suitability of technology for the requestor's application or industry.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] The present invention will become more fully understood from the detailed description given here below, the appended claims, and the accompanying drawings in which:

[0007] **FIG. 1** is a schematic illustration of an information system in accordance with the present invention;

[0008] **FIG. 2** is a flow chart illustrating the application modules of the present invention and representative steps for a requestor to submit a Technology Search Request;

[0009] **FIG. 3** is a flow chart illustrating the operation of the Available Technology Module shown in **FIG. 2**;

[0010] **FIG. 4** is a flow chart illustrating the operation of the Requested Technology Module shown in **FIG. 2**;

[0011] **FIG. 5** is a flow chart illustrating the operation of the Production Data Module shown in **FIG. 2**; and

[0012] **FIG. 6** is a flow chart illustrating the operation of the Published Media Module shown in **FIG. 2**.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0013] **FIG. 1** schematically illustrates the information system **10** of the present invention. The information system **10** includes a host system **12** connected, or connectable, to a plurality of remote requestors, via customer servers C1-C3, and to a plurality of purveyors, such as content providers via content provider servers P1-P3 and/or technology providers via servers T1-T3. While the term "servers" is used throughout this application to permit communication between and among customers, purveyors, and the host system, this term is intended to encompass any suitable communication device permitting an electronic exchange of information including browsers for personal computers and the like. The host system **12** is shown in **FIG. 1** to include a host server **14** for communicating with the customer, an application server **16** for selectively executing applications, a population server **18** configured to obtain technology information from the content and technology provider sources, and a data server **20**. The data server **20** includes a data structure **30** with one or more data arrays referred to herein as a technology database **32**, customer data structure **34**, published media storage **36**, and production data storage **38**. While the data structure **30** is illustrated as having separate storage areas for technology, published media, customer information, and production data it should be appreciated that any number of conventional storage and communication techniques may be used without departing from the scope of the invention defined by the appended claims. For example, a single database storing data for all of the application modules may be used.

[0014] The data server **20** stores information and communicates with the application server **16**, population server **18**,

and a search engine **22**. The data server obtains, integrates and configures technology, customer, requestor, and/or purveyor information in a searchable source, e.g., data structure **30**, and permits the assembly and reporting of information in a usable format. Those skilled in the art will appreciate that the components of the host system **12** illustrated in **FIG. 1** are provided for illustrative purposes and that numerous conventional information exchange techniques and system configurations may be used with the present invention. For example, while the host system **12** is illustrated to include separate host, application, population, and data servers, as well as a search engine, a single server may be configured to provide the operations of all of the individually illustrated servers. It is contemplated that the operational characteristics and the "configuration" of the host server will be accommodated through software that is interfaceable and executable with the respective components of the host system as well as web platform query languages and server platforms to permit plug-in access or linking to the external informational sources described herein, data structure population techniques such as extraction and manual input, conventional searching strategies, and communication with request and/or purveyor servers.

[**0015**] In order to facilitate the description of the present invention, the embodiment of the information system **10** of the present invention shown in **FIG. 2** includes five (5) information modules integrated or communicating with the application server **16**—Available Technology **40**, Requested Technology **42**, Industry Services **44**, Production Data **46**, and Published Media **48**. Either alone or in combination, the application modules, in conjunction with the integrated data server **20**, permit a rapid and organized exchange of information between interested parties which is critical for making business decisions. For example, in the described embodiment, the host system **12** is configured to provide a requestor with technology information concerning products, services, production data, and published media (either generally or for a particular industry) which may be tailored or customized for the requestors, such as by source, industry, and/or market. By way of example rather than limitation, the system and method of the present invention are described herein in the context of technology information pertaining to the automotive electronics industry. However, the present invention can be used to effectively assemble, store, and disseminate information regarding any industry.

[**0016**] Some of the application modules (e.g., Available Technology, Requested Technology, and Industry Services) are configured to receive search requests, search the information stored in the data structure, and report relevant information to the requestor. One particularly useful and unique feature of the information system and method of the invention is the provision of requestor accessible external informational sources in addition to the reporting of technology information stored in the data structure **30**. This feature, embodied in the Requested Technology, Industry Services, Published Media, and Production Data Modules, permits the requestor to access relevant information not stored in the data structure as well as inform purveyors in relevant technology areas of the requestor's interest and/or need for a specific technology.

[**0017**] Before turning to a detailed discussion of the operation of the individual application modules, it is noted that the host system **12** is configured to populate the data structure **30** with technology information from a variety of sources. As generally noted above, the data server **20**, and/or the illustrated linked servers, allows technology information from a variety of sources to be loaded into the data structure **30** and updated by any number of techniques. The content providers P1-P3 and technology providers T1-T3 are illustrative examples of such sources. The present invention specifically contemplates population of the data structure **30** through web-based extraction, communication with an organization or purveyor maintaining a dedicated server for data structure population, or through system users having password protected account access to the data structure. The web-based extraction is represented by the "spider out" and "spider in" arrows in **FIG. 1** whereby the population and host servers **18** and **14** operate in a conventional manner to retrieve technology information from the provider sources (such as data sheets on provider websites) and load the information in a predetermined parametrically searchable format. System user loading is represented by the "manual load arrow" shown in **FIG. 1**. The information may also be loaded from CD-ROMS or other media containing the necessary technology information. If the purveyor's website contains current technology information with appropriate parametrics, web-based data extraction is a preferred method as it will likely be the most effective means for loading and updating the product data. For completeness, it is noted that notwithstanding the described population techniques, those skilled in the art will appreciate that a variety of alternative data structure populating techniques generally known in the art may be used.

[**0018**] The data structure **30** is illustrated and described herein as including separate databases or data arrays specifically configured for each of the application modules. Notwithstanding this illustrative example, those skilled in the art will appreciate that a variety of data structures may be used without departing from the scope of the invention. The content of the data structure **30**, or the individual data sources illustrated in the drawings, generally includes a technology database **32** for storing data entries for the Available Technology, Requested Technology, and/or Industry Services Modules. Each of the data entries are stored in searchable fields and contain a variety of information pertinent to commonly used criteria for selecting appropriate technology for an application or industry. For example, the technology database preferably includes technology and purveyor data as well as other optionally included data described below with reference to each of the modules. The Published Media Storage data array **34** and Production Data Storage array **38** may include a searchable data array for module operation in a manner similar to Available and Requested Technology searches. These data arrays may also include a library of available external informational sources accessible by the host system such as through conventional plug-in or linking technology. Finally, the customer data structure **36** is represented in the drawing to identify storage of requestor or purveyor specific information. For example, the customer data structure may include requestor or purveyor identification information (e.g., user identification or password) as well as the external informational sources for which each user has registered. Again, notwithstanding the separate illustration of these data arrays and the recited representative content of each, it will be appreciated that the data structure **30** may be configured in a number of ways suitable for use in the present invention.

[0019] Turning now to the application modules **40-48**, an overview of the function of each module is followed by a detailed description of their respective operation and integration into the overall system and method. The Available Technology Module **40** (**FIG. 3**) is configured to receive a Technology Search Request from a requestor, cause the search engine **22** to perform a search of the data structure **30** for data entries matching the search request, and communicate an Available Technology Report containing information regarding the availability of technology matching the request to the requester. While the form and substance of the report may vary, this module generally permits the requestor to identify technology that may be pertinent to evaluating the availability of suitable technology for a particular application or industry. For example, in the described embodiment, the Available Technology Report includes information on the status or availability of the requested technology, the qualification status of the technology with respect to industry requirements, as well as information regarding the purveyor such as contact information and/or a website-email link.

[0020] The Requested Technology Module **42** (**FIG. 4**) facilitates the identification of an appropriate purveyor(s) of publicly unavailable or generally unknown technology and permits the requestor to submit inquiries to purveyors identified by the host system as having products, services, industry experience, and the like that closely match the technology request. In general, this module facilitates the exchange of information regarding the technology needs of a requestor as well as contact information for the requester. As such, the Requested Technology Module permits the requestor to access an external informational source for information not contained within the host system. This feature is beneficial to requestors and purveyors alike and represents a significant improvement over conventional information or product exchanges.

[0021] The Industry Services Module operates in a manner similar to the Available Technology and Requested Technology Modules but focuses on service related information sources such as Academic Organizations, Contractors, Consultants, Associations, Conferences and Exhibitions, Regulatory Agencies, and Standards Organizations. While the Industry Services Module is represented herein as being separate from the Available and Requested Technology Modules, these modules may be combined in the host system.

[0022] The Production Data Module provides the requester with information regarding past production levels, current production levels, and forecasted production levels of potential customers, competitors and suppliers. As is discussed in greater detail below, the Production Data Module preferably accesses and searches dedicated content provider servers (such as consultants, industry experts, and other content providers) through conventional plug-in technology and/or searches information stored in the data structure of the host system **12**. Accordingly, the requestor may again access external information sources using this module to obtain relevant data. The production information accessible through this module may be sorted by manufacturer, platform, region and/or technology to provide usability and provides the requestor with information critical to fully understanding the market and demand for its technology.

[0023] The Published Media Module permits the requestor or user to access published information such as press releases, news stories, person or organization profiles, technical articles, market trend & analysis reports or other industry related publications and reports. The published information may be stored in a dedicated array of the data structure via web site extraction or other population techniques. Alternatively, in a manner similar to the Production Data Module, the requestor has the option of accessing external informational sources via web links and server plug-ins. Further, as is described in greater detail below, the data structure may include a library of available plug-in services from which the user may customize a published media search list of free or fee-based services. The host system **12** is configured to sort the information obtained from any of the sources based on requestor needs, such as by manufacturer, organization, technology, program, person, tier level or general category.

[0024] It should be appreciated that while these modules are described herein as being integrated into the host system **12**, the system may include any one, or number of, the modules either alone or in combination. Further, it is noted that unlike conventional information exchanges, the Requested Technology, Industry Services, Production Data, and Published Media Modules each provide access to external informational sources by which a requestor may seek information not stored within the host server **12**. This feature allows the requestors to further explore the availability of suitable technology (including products and services) through purveyor inquiries and information maintained by industry experts, consultants, and the like.

[0025] As shown in FIGS. **2-5**, the requestor may access selected application modules at various stages. For example, as shown in **FIG. 2**, when a requestor logs onto the host system, the requestor is permitted to access any one of the modules through a conventional message prompt or menu **50**. Alternatively, as is described below, the requestor may be prompted to initiate a new or revised search in an application module after completing a previous module. Each of the application modules are responsive to information provided by the requestor via a Technology Search Request or similar inquiry. As used herein, the term Technology Search Request includes requests for product, service, process, or general technology/industry information. While the manner of obtaining, and the substance of, the Technology Search Request may vary, the host server is configured to prompt the requestor to input technology information and parametric search data that corresponds to, or is searchable in, the data fields and entries in the data structure **30** (Step **52**). Search requests may be provided by way of inputting the information in a free field format or through the use of a pull-down menu. The Technology Search Request may have a form capable of use in more than one application module (e.g., Available Technology and Requested Technology) or may have a module specific format. By way of example rather than limitation, a requester seeking Available Technology information regarding microcontrollers would manually type the word 'microcontroller' into a 'Technology' text-entry window or highlight/select a predefined 'microcontroller' selection from a menu. After, or in conjunction with, the display or entry of the technology information, the host server would prompt the requestor to enter parametric data. As used herein, the term parametric data includes search parameters descriptive

of the technology of interest to the requestor and usable by the search engine **22** to identify matching or relevant technology. In the embodiment specifically illustrated herein, the server is configured to provide a list of parametric fields associated with technology information stored in the data structure. In the controller example, the server may display preselected parametric data-entry fields which are associated with microcontrollers and for which data fields are contained in the data structure. The parametric data-entry fields associated with microcontrollers may include 'A to D', 'Memory Capacity & Type (Ram, Rom, OTP & Flash)', 'Clock Speed/Frequency', 'Communications/Interfaces', 'Temperature Range', 'Timers', 'Operating Voltage' and 'Package Type'.

[**0026**] Turning now to the Available Technology Module **40** illustrated in **FIG. 3**. After the requester chooses to enter the Available Technology Module (Step **50**, **FIG. 2**) and submits a Technology Search Request (Step **52**, **FIG. 2**), the server stores the request (Step **54**, **FIG. 2**) and proceeds to Step **60** in **FIG. 3** to search the data structure, e.g., technology database **32**, to identify data entries that satisfy or closely match the substance of the request. As used herein, the term "closely match" is intended to encompass conventional parametric searching techniques wherein a search request parametric is used as a search term to identify identical or synonymous terminology contained in data entries or documents in order to identify information that may be pertinent to the parametric. Any number of conventional search engines and techniques may be used to perform the data structure search. By way of example, it is contemplated that the data structure **30** may include a number of categories or data fields containing data entry information searchable using the requestor provided parametric. The determination of whether a specific data entry is "closely matching" may include evaluation of the number of data fields in which the data entry has the same or similar term as the parametric as well as a weighing of the importance of each of the data fields.

[**0027**] As is represented by Step **62** (**FIG. 3**), the application server **16** generates an Available Technology Report based on the search. The report is preferably, though not necessarily, sorted in rank order based upon the parametric match (e.g., the product, service, or other search term) followed by production history or readiness. A representative Available Technology Report is in the form of a table identifying purveyor information (name and contact data), product type (e.g., microcontroller), product designation (model or order number), production status (e.g., not available, currently unavailable, or anticipated date of availability), certifications, and sample availability. Products from different purveyors having the same production readiness are rank ordered alphabetically by purveyor's name. The requestor may use the Available Technology Report to evaluate the purveyor's products and services and/or contact selected purveyors.

[**0028**] The Available Technology Module may provide additional product or service information stored in the data structure **30**. For example, in the case of products that are tailored for use in the automotive industry, the Available Technology Report includes information regarding the production status of the product (available both generally and/or for a particular industry), whether and what type of qualification certifications have been obtained, sample availability, and contact information. By the Available Technology Report, the system and method of the present invention provides the requestor with information to evaluate the suitability of the identified products or services for use in a particular application and/or industry. In the continuing example of a microcontroller for the automotive industry, the Available Technology Report may include the following information:

[**0029**] Product in Production—Yes or No

[**0030**] Product in Production for Automotive Application—Yes or No

[**0031**] Product and/or Processes Qualified for Automotive Application—Yes or No. If Yes, specific industry related qualifications achieved (e.g. for automotive electronics applications—ISO, QS9000, Q101, etc.)

[**0032**] Planned Date for Automotive Application Production—Month/Year or Not Available

[**0033**] Sample Availability—Currently Available or Month/Year

[**0034**] Contact information for purveyor of technology (e.g., name of contact person, URL, website, email address, telephone number, and/or post office address).

[**0035**] While the contact information may be listed in any manner suitable to convey the information or as requested by the purveyor, it is anticipated that contact information may include listings by single point contact, regionally, or by which company is requesting the technology.

[**0036**] As noted above, the system and method of the present invention provides the requestor with access to other application modules where appropriate. Step **64** in **FIG. 3** illustrates an instance wherein the requestor is prompted to indicate whether the requestor wishes to review production data for any item identified in the Available Technology Report that is currently available for production. That is, for example, if 'Yes' is indicated in the Automotive Production (or customer's specific industry) field or there is a Planned Date for Automotive Application (or customer's specific industry) Production, a prompt or "click-access" may be provided to permit the requestor to review production information. Alternatively, as shown in **FIG. 3**, the system may prompt the requester to indicate whether access to Production Data Module (Step **66**) is desired. Following completion of the production information option, a prompt from the server asks whether the requestor wishes to be linked to the Requested Technology Module (Step **68**) or conduct additional searching (Step **70**) such as in the Published Media or the Industry Services Modules. The steps may be performed with a single prompt or through a series of prompts as indicated in **FIG. 3**.

[**0037**] The Available Technology Module permits the requester can rapidly identify technologies which meet specific application needs including functionality as well as product and process qualification. Further, the requestor can identify which Available Technology information meets the specific production readiness needs of the application. Manufacturers can rapidly benchmark the competition by accessing parametric details and production readiness status of competitors' products. With rapid access to Available

Technology information which meets the requestor's parametric and timing needs, the capital resources and human resources currently expended to gather this information can be significantly reduced. Technology options for the application, as well as production readiness availability, may be identified thus enabling an expedited market launch of the requestor's product incorporating the best-suited technology for the application.

[0038] A further feature of the information system **10** is the Requested Technology Module **42** which is particularly useful when the requestor is searching for a technology which has not been promoted in the public domain. For example, when the development and/or proprietary status of the technology has led to a lack of publication or the purveyor of the technology has not developed or targeted the technology for application in the industry of interest to the requestor. The Requested Technology Module also enables purveyors to be informed of potential customers for the purveyor's product or services. While the Available Technology Module searches the data structure **30** in order to return product specific information to the requester, the Requested Technology Module searches the data structure to identify purveyors that may be able to provide the product, service, or relevant information to the requester. The Requested Technology Module then permits the requestor to authorize the system to notify selected purveyors of the requestor's needs in order to facilitate further exchange of information. Accordingly, the Requested Technology Module permits the requestor to access external information (such as through contacting purveyors for further information) providing an avenue to further investigate suitable technology leads.

[0039] As is shown in **FIG. 4**, the Requested Technology Module may be accessed directly from the select search module prompt (Step **50**, **FIG. 2**) or after completing an Available Technology search (Step **72**, **FIG. 3**). As shown in Step **76** of **FIG. 4**, the Requested Technology Module is initiated through submission of a Requested Technology Inquiry from the requester. This Inquiry may be based on the Technology Search Request used in the Available Technology Module or may be separately entered or submitted by the requestor, such as through entering relevant data in a menu prompt or other suitable means. The Requested Technology Inquiry preferably includes industry information and product or service information, such as parametric data pertaining to the requested technology.

[0040] The form of the prompt and data entry may vary. For example, in the continuing automotive example, the system is configured to utilize the information entered by the requestor's search in the Available Technology Module and load this data directly in to the Requested Technology Module to perform the search. Alternatively, the requestor may start the search from the Requested Technology Module, requiring the requestor to either manually type the word "microcontroller" into a 'Requested Technology Inquiry' text-entry window or highlight/select a predefined 'microcontroller' selection from a menu and then enter key parametric data as described above. Based upon the key parametric data, the search engine **22** identifies data entries in the data structure, e.g., technology database **32**, containing the purveyor(s) and technology(ies) that most closely match the inquiry based on predetermined parameters such as product, process, design, and/or production competencies (Step **78**, **FIG. 4**).

[0041] In Step **80**, the host server **14** informs the requestor of matches and requests selection of purveyors to which the requestor wishes to send a Requested Technology Notice. The request may be made by a screen prompt asking the requestor if they would like the Notice to be sent to one or more of the matching purveyors. If the requestor replies "Yes", an additional prompt asks the requestor to identify which of the purveyors to send the Notice. The requestor then has the option to send the Notice to all matching purveyors or to specific selected purveyors. After the requestor selects the purveyors to which the Notice is to be sent (Step **82**), the host server sends (such as via email) the Requested Technology Notice to the appropriate contacts at the purveyor organizations (Step **82**). The system may then return the requestor to Step **70** in **FIG. 3** or otherwise prompts the requestor to indicate whether additional searching is desired.

[0042] As is discussed above, the search for purveyors that closely match the Requested Technology Inquiry is performed using the information in the data structure. A single data structure may be accessed for both the Available and Requested Technology Searches or may be separated into dedicated databases for each module. In either instance, information in the data structure for the Requested or Available Technology Searches may be loaded and updated by purveyors.

[0043] The current approach for purveyors to identify requestors or potential customers of their technology utilizes expensive, lengthy, and labor intensive methods. These methods include extensive research to identify target companies and the appropriate individuals in these target companies who might be potential users or requestors for the specific technology. This approach is ineffective as the purveyor of the best-suited technology for the application identifies many of the requestors either too late or never.

[0044] In contrast, the Requested Technology Module of the invention provides an efficient means for requestors to identify technology which is difficult to locate in the public domain and enables purveyors to rapidly identify potential customers for their technology. This feature significantly reduces the infrastructure and associated costs currently necessary to identify new business opportunities. Further, the ability to rapidly identify various types of requested technology better serves product planning processes as constantly updated requested technology tables, capable of being sorted by parametric and other data, provide insight into the present and future needs and wants of customers.

[0045] The Industry Services Module **44** enables the requestor to send a request for a specific service to the service suppliers stored in the data structure. Similar to Requested Technology feature, discussed previously, a 'Requested Service Notice' is directed to the service suppliers closely matching the requestor's specific needs and includes the parameters of the specific service as well as the requestor's contact information. It is contemplated that service information stored in the data structure **30**, particularly the technology database **32** which may be used by the Industry Services Module, may be acquired from numerous sources such as academic organizations, contractors, asso-

ciations, conferences and exhibitions, regulatory agencies, and standards organizations. In general, the Industry Services Module provides access to information relating to individuals and organizations having expertise or responsibilities within industries of interest and capabilities for providing consulting services and the like. Support organizations such as those discussed above are fruitful sources of knowledge, information, or general guidance that may be critical to industry participants. The following are illustrative examples of the data fields and type of information that may be searchably stored in the data structure for each of the Industry Services purveyors.

[0046] 'Academic'—research and development projects and focus (e.g. micro-machined silicon, 42 Volt architecture, electronic valve control, etc.).

[0047] 'Contractor'—(e.g. design, manufacture, consultants, etc.).

[0048] 'Associations'—(e.g. engineering, manufacturing, etc.).

[0049] 'Conferences & Exhibitions'—(e.g. vehicle manufacturers, tier one suppliers, tier two suppliers, electronics, interiors, and time, location, conference or exhibition participants, focus, and agenda).

[0050] 'Regulatory & Standards Organizations'—(e.g. environmental, multiplexing, and information about charter or focus of organization)

[0051] 'Contact information'—contact information for the organization and/or personnel within the organization

[0052] Just as with the Available Technology and Requested Technology Modules, the information for these organizations would be stored in the data structure, loaded and updated via web-based data extraction, by other available media containing the information, and/or by each of the subscriber organizations. The information in the database would again be sorted into fields suitable for searching and the service search request would be formatted to facilitate identification of closely matching organizations by the search engine.

[0053] As is described above, the Available Technology, Requested Technology, and Industry Services Modules are each configured to access and search information stored in the host system **12**, particularly the data structure **30**. Before describing the operation of the Production Data and Published Media Modules, it is noted that these modules preferably use a plug-in server to access information external to the host system **12**. As will be appreciated by those skilled in the art, the plug-in server may be embedded within the application server **16**, or one of the other servers illustrated in **FIG. 1**, or may be a separate server within the system. The plug-in server and/or search engine **22** communicate with the Published Media Storage and/or Production Data Storage sections of the data structure **30** which maintain a library of available external sources. The host system **12** maintains a source list for each registered requestor or user which is a subset of the available sources maintained in the library. In at least the case of Production Module and the Published Media Module, the sources may be free or fee-based services. In the illustrated embodiment, a separate library of Production Data sources and Published Media sources are separately maintained within the system. As will be described in detail below, requestors are provided with the opportunity to customize their individual source list including being able to subscribe to fee-based services.

[0054] Turning now to the Production Data Module **44**, this feature provides the requestor with an opportunity to access data relating to the production status of a particular product, volume information, platform forecasting where the product or service may be applicable, and/or price data. End item manufacturers, intermediate tier level suppliers, service suppliers, and other participants in an industry rely upon production information and forecasts to determine the market for a particular product or service. Gathering this information currently involves utilizing numerous information sources, many of which provide incomplete and/or inaccurate information, and is therefore ineffective and inefficient. In the present invention, the Production Data Module permits requestors to access production information through plug-ins to dedicated information provider sources. The sources may include industry analysts, consultants, and periodical providers as well as manufacturers of products. Thus, the Production Data Module provides an accurate, comprehensive, and accessible single source of production and forecast information for industry stakeholders.

[0055] The available sources and plug-in information is maintained in the host system **12**, such as the production data storage array **38** of the data structure **30**. A customized list of production data sources may be maintained for each registered user such as in the customer data structure **36**. In operation, the Production Data Module (**FIG. 5**) receives a production search request from the requestor (Step **90**). While the form or format of the production search request may vary, it is contemplated that the request will designate the industry within which the requestor seeks information as well as parametrics relating to one or more of: time frame, manufacturing company, global region of manufacturer's headquarters, country of manufacturer's headquarters, global region of production, country of production, manufacturing plant location(s), platform designation, end item categories, product application, past, present & forecasted annual volumes and pricing. The host system **12**, such as via the application server and search engine, accesses the production data source plug-ins maintained in the data server **20** and links with the identified production data sources via a plug-in. The system then retrieves production data matching the production search request from the production data sources (Step **94**). The host system then generates and sends a Production Data Report to the requestor (Step **96**). The form and format of the Production Data Report may vary but preferably includes one or more of the above discussed request parametrics and spans a suitable time interval.

[0056] An example of suitable data entry fields and parametric data for a search in the Automotive Industry may include:

[0057] 1. 'Time Frame' (e.g. requestor enters '2000 through 2012'),

[0058] 2. 'Manufacturer' (e.g. requestor leaves this window blank),

[0059] 3. Country of Manufacturer's Headquarters (e.g. requestor enters 'Japan'),

[0060] 4. 'Region of Manufacturer's Headquarters' (e.g. requestor leaves this window blank),

[0061] 5. 'Region of production' (e.g. requestor selects 'All.'),

[0062] 6. 'Country of Production' (e.g. requestor leaves this window blank),

[0063] 7. 'Manufacturing Plant Location' (e.g. requestor leaves this window blank),

[0064] 8. 'Vehicle platform' (e.g. requestor leaves this window blank), and

[0065] 9. 'Vehicle Category' (e.g. requester enters 'Sport Utility').

[0066] The data structure **30**, and particularly the production data storage array **38**, may be configured to store production data in a searchable fashion similar to the Available and Requested Technology Modules for generating production data reports in response to search requests. The data structure may be populated through the population server **18** or other conventional techniques with the production data sorted in predetermined fields. Production Data stored in data storage **38** may be periodically updated by manufacturers such as through password-protected account access. By way of example, each data entry preferably designates whether the manufacturer is an end item manufacturer (e.g., vehicle manufacturers for the automotive industry) or an intermediate tier level supplier (e.g., tier one or tier two supplier). Each data entry also preferably designates the industry within which the manufacturer operates and the products produced by the manufacturer may be used. The data entries may further include sortable fields relating to a predetermined time frame such as data from two years prior, current year-to-date data, a production forecast for the remainder of current year, and/or a production forecast for the next nine years. Production forecasts may be tabulated from information supplied by the manufacturer (typically platforms announced by vehicle manufacturer) and programs sourced to other suppliers. For forecast periods where specific platform, product, and application information are unavailable from the manufacturer, the information may be tabulated from industry analyst input of from searches of plug-in sources such as is described above.

[0067] In the continuing automotive industry application example, the Production Data Report would indicate the total annual production of all sport utility vehicles produced by Japanese vehicle manufacturers for the years 2001, 2002, year-to-date for 2003, and the forecast for these vehicles for the balance of 2003 through 2013. In addition to the volume information, pricing information may also be accessible from the Production Data Module.

[0068] The Production Data Module, used alone or in combination with other application modules, advantageously supplies the requestor with access to a single information source having comprehensive production and forecast data so as to eliminate the additional time, resources, and costs associated with obtaining the data through the numerous information sources that currently hold the data. The feature also eliminates the costs associated with the slower channels of obtaining the information, i.e., conversations, interviews, etc. Further, the improved accuracy, comprehensiveness and rapid access of this information saves industry participants time and money as capacity planning, time to market, and product planning strategies may be made more quickly and accurately.

[0069] The information system **10** also preferably includes a Published Media Module providing access to information sources such as trade journals, technical periodicals, web sites, and other information services. The Published Media Module is again an example of the system providing the requestor with access to information outside of the information stored in the host system. In this module, the system may search internally stored data, such as in the Published Media storage array **34**, as well as provide plug-in access to published media websites or dedicated provider sources.

[0070] As shown in **FIG. 6**, the Published Media Module initially prompts the requestor to provide a media search request (Step **100**). In a manner similar to the previously described modules, the media search request may be in a variety of forms and formats, including a prompt menu with predetermined parametric search terms or categories. By way of example, the data fields and parametric data may generally be directed to: 'Time Frame' (MM/DD/YR to MM/DD/YR), 'Technology', 'Company or Organization', OEM/End Item Manufacturer level (e.g., OEM/End Item 'Vehicle Manufacturers' as well as Tier One and Tier Two Manufacturers for the Automotive industry), 'General Industry', 'Regional', 'Person'. The requestor would enter data in all or any combination of these parameters to access the specific published media in the storage array **34** and/or through plug-in links to specific documents. In the latter case, after entry of the media search request, the system accesses the media sources via plug-ins (Step **102**). After searching the media sources and reporting the results therefrom (Steps **104** and **106**) the Published Media Module prompts the requester to determine whether the requestor wishes to add plug-ins for unregistered media sources. It is anticipated that the host system will maintain a list of media sources available to all requesters as well as a customized list for each registered user identifying which of the available sources are included in the user's customized list. The system may be configured to search only sources in the user's list or may search all sources and provide abstracts or summaries of unregistered sources to the user. The user can then elect, such as in Step **108**, to add previously unregistered sources to its customized library. If the requestor elects to add one or more of the unregistered media sources, the system adds the source to the customized registered list at Step **110** and prompts the requestor to indicate whether additional searching is desired (Step **112**).

[0071] As noted above, the Published Media Module may also be configured to search a database of published material maintained by the host system. This search would be performed by the search engine in a conventional manner.

[0072] From the above description, it should be appreciated that the Published Media Module is configured to access a customized list of on-line or system stored published media data thereby providing the user with the ability to select sources that are most relevant to the user's market and industry. The ability to add or delete sources from the customized library or listing provides further flexibility for tailoring the system to the changing needs of the users. It is contemplated that the report provided to the user would include capabilities to scan, sort, and access additional published media information. By way of illustration, the data structure **30** is preferably configured to maintain a library of available external informational sources from which each requester may create a customized list of reg-

istered external informational sources. It is further contemplated that when the requestor selects its customized list, the host system may prompt the requestor to identify external informational sources that are not included in the library of available external informational sources but that the requestor may like to include in published media or other external searches described herein. If, in response, the requestor identifies such an additional source, the manager of the host system may investigate the suitability and availability of the additional source and, if desired, add the source to the library of available external informational sources.

[0073] The Published Media feature has many advantages. As mentioned above, technical articles, press releases, general industry articles, company and personal profiles and announcements are generated by numerous organizations, information and consulting services, and industry publications. The advantage of an industry specific, integrated search engine, configured specifically for the user's needs, to locate published media would reduce time, effort and associated costs to obtain the media. Searching through the combination of website, web link and on line services affords the user access to a comprehensive tool for rapid access of published media information.

[0074] The present invention also includes a selective filtering feature which allows a user to limit access to information, such as Available Technology Information, Requested Technology Information, Production Data, etc., which the user has input into the system database or is accessed through external plug-ins. For example, a vehicle manufacture may input Production Data into the system data structure and then use the selective filtering feature to limit access to such Production Data to only specific registered users. The selective filtering feature may be based on a conventional algorithm which requires a code or password to gain access to the database, specific portions of the data structure (e.g. Available Technology Information, Requested Technology Information, etc.), and/or some or all information input by a specific user or the selective filtering feature may be based on other similar types of known computer information protection systems.

[0075] The foregoing discussion discloses and describes an exemplary embodiment of the present invention. One skilled in the art will readily recognize from such discussion, and from the accompanying drawings and claims, that various changes, modifications and variations can be made therein without departing from the true spirit and fair scope of the invention as defined by the following claims.

What is claimed is:

1. An information system for disseminating technology information between requestors and purveyors, comprising:

a host system having a data structure, a search engine communicating with the data structure, and an application server communicating with the data structure and search engine, the data structure includes a first data array, a second data array, and a third data array, the first data array containing a plurality of data entries each with technology and purveyor data, the second data array containing links to a plurality of available external informational sources, and the third data array containing requestor data including requestor registered external informational sources, said requestor registered external informational sources being a subset of the available external informational sources, the application server being configured

to receive a search request submitted by a requester, the search request including a technology parametric;

to cause the search engine to conduct a search in one of the first data array or one or more of the available external informational sources to identify data entries in the first array or documents in the external informational sources that closely match the technology parametric; and

to communicate a search report to the requester.

2. The information system of claim 1 wherein the application server is further configured to permit the requestor to selectively add informational sources included in the plurality of available informational sources to the requester registered external informational sources.

3. The informational system of claim 1 wherein the second data array includes links to published media informational sources.

4. The informational system of claim 3 wherein the published media informational sources include purveyor servers and web sites.

5. The informational system of claim 1 wherein the second data array includes links to production data informational sources.

6. The informational system of claim 5 where the production data informational sources including consultant servers and web sites.

7. The information system of claim 1 further including a requestor server and a purveyor server and wherein the application server is configured to access purveyor data associated with one or more of the identified data entries in the first array and send a search request notice to one or more of the identified purveyors using the purveyor data.

8. The information system of claim 7 wherein the application server is further configured to send to the requestor server a search report providing technology and purveyor data from the identified data entries in the first data array and a request for the requester to select one or more of the identified purveyors, to receive selection information from the requester server, and to send the search request notice to only the selected purveyors.

9. The information system of claim 7 wherein the search engine identifies data entries closely matching the search request by conducting a parametric search of the data structure for data entries having technology data closely matching the technology parametric.

10. The information system of claim 7 wherein the application server is further configured to:

conduct an available technology search based on the search request by causing the search engine to identify data entries in the first data array that closely match the search request;

send an available technology report to the requestor identifying technology and purveyor information for the data entries matching the search request; and

prompt the requester server to indicate whether the requestor wishes to continue searching using external informational sources.

11. An information system for disseminating technology information between requestors and purveyors, comprising:

a requestor server;

a purveyor server; and

a host system having a data structure containing a plurality of data entries each with technology and purveyor data, a search engine communicating with the data structure, and an application server communicating with the data structure and the search engine, wherein the application server is configured to

receive a search request from the requestor server, said search request including a technology parametric,

cause the search engine to identify data entries having technology data closely matching the technology parametric,

access purveyor data associated with one or more of the identified data entries, and

send a search request notice to one or more of the identified purveyors using the purveyor data.

12. The information system of claim 11 wherein the application server is further configured to send to the requestor server a search report providing technology and purveyor data from the identified data entries and a request for the requester to select one or more of the identified purveyors, to receive selection information from the requester server, and to send the search request notice to only the selected purveyors.

13. The information system of claim 11 wherein the search engine identifies data entries closely matching the search request by conducting a parametric search of the data structure for data entries having technology data closely matching the technology parametric.

14. The information system of claim 11 wherein the search request further includes an industry parametric, wherein each data entry further includes industry data, and wherein the search engine identifies data entries matching the search request by identifying data entries having industry data closely matching the industry parametric.

15. The information system of claim 11 wherein the application server is further configured to:

cause the search engine to identify data entries in the data structure matching the search request,

send an available technology report to the requestor identifying technology and purveyor information for the data entries matching the search request.

16. The information system of claim 11 wherein the application is further configured to prompt the requestor server to indicate whether the requestor wishes to continue searching in external informational sources.

17. A method of disseminating technology information between requester servers and purveyor servers using a host system having a data structure, a search engine communicating with the data structure, and an application server communicating with the data structure and search engine, the data structure including one or more of a first data array, a second data array, and a third data array, the first data array containing a plurality of data entries each with technology and purveyor data, the second data array containing links to a plurality of available external informational sources, and the third data array containing requestor data including requestor registered external informational sources, said requestor registered external informational sources being a subset of the available external informational sources, said method comprising the steps of:

providing the requestor with the option of conducting an available technology search to identify closely matching data entries in the data structure or an external informational search including one or more of a requested technology search, published media search, and a production data search.

18. The method of claim 17 wherein upon requestor selection of a requested technology search, the method further includes the steps of:

receiving a search request from the requestor server, the search request including a technology parametric;

identifying data entries having technology data closely matching the technology parametric;

accessing purveyor data associated with one or more of the identified data entries; and

sending a search request notice to one or more of the identified purveyors using the purveyor data.

19. The method of claim 18 further including sending a search report to the requester server and a request for the requestor to select one or more of the identified purveyors, receiving selection information from the requestor server selecting one or more of the identified purveyors, and sending the search request notice to only the selected purveyors.

20. The method of claim 17 wherein upon requestor selection of a published media search, the method further includes the steps of:

receiving a search request from the requestor server, the search request including a technology parametric;

conducting a parametric search in each of the available external informational sources to identify published media documents having information pertaining to the technology parametric; and

communicating a published media search report to the requestor.

21. The method of claim 20 wherein the published media search report includes a copy of each of the identified published media documents from the requestor registered external informational sources and wherein the method further includes:

providing the requester with information on the available external informational sources containing an identified published media document that are not included in the requestor registered external informational sources; and

permitting the requester to add available external informational sources to the requester registered external informational sources.

22. The method of claim 17 further including prompting the requestor to create the requestor registered external informational sources by selecting from the stored list of available external informational sources and storing the requestor registered external informational sources in the data structure.

23. The method of claim 22 further including prompting the requestor to identify additional sources not included in the available external informational sources and selectively adding an additional source to the available external informational sources.

24. The method of claim 17 wherein, upon the requestor selection of a published media search, the method further includes the steps of:

receiving a search request from the requestor server, the search request including a technology parametric;

conducting a parametric search in each of the requestor registered external informational sources to identify published media documents having information pertaining to the technology parametric; and

communicating a published media search report to the requestor.

25. The method of claim 24 wherein the published media search report includes a copy of each of the identified published media documents from the requestor registered external informational sources and wherein the method further includes:

determining whether the requestor wishes to conduct a published media search in any of the available external informational sources not included in the requester registered external informational sources; and

permitting the requestor to add available external informational sources to the requester registered external informational sources.

26. The method of claim 17 wherein upon the requestor selection of a production data search, the method further includes the steps of:

receiving a search request from the requestor server, the search request including a technology parametric;

conducting a parametric search in one or more of the available external informational sources to identify production data having information pertaining to the technology parametric; and

communicating a production data search report to the requestor.

27. The method of claim 17 further including the step of performing an available technology search prior to providing the requestor with the option of conducting an external informational search and wherein the performance of an available technology search includes receiving a search request from the requester, the search request including a technology parametric,

searching the first data array to identify data entries having technology data closely matching the technology parametric, and

sending an available technology search report to the requestor.

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